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ABSTRACT

The recent sudden reduction in the birthrate, following an earlier reduction in 1964-65, makes it clear that school enrollment will shrink steadily for the next 15 years. Demand for teachers in the state of Connecticut will decrease from about 2,300 per year to about 1,300 per year by 1980 and will continue to shrink the next 4 years to about 1,200 in 1984. Connecticut presently produces about 5,000 to 6,000 new teachers each year, and many who qualified in previous years are competing for the same jobs. Students are already turning away from the study of teaching, and enrollment will certainly drop 30-40 percent in the next 3 years, but the oversupply of new teachers will probably continue for many years. (Author)

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THE SUPPLY AND DEMAND FOR SCHOOL TEACHERS IN CONNECTICUT

BY

W. Lewis Hyde

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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Introduction

It is well known that certified teachers have difficulty finding jobs. What are the prospects, and what advice should be given to young people? Will things pick up again, or get worse? How should our colleges respond now, and in their plans for the future? What do we know?

Teachers at Work

First, we know the number of "instructional staff" quite precisely· i.e., 38,481 in public elementary and secondary schools (1971-72). They were all certified by the state. It is doubtful, however that the result is all that precise. Only 33,909 were "classroom teachers" that year. Many teachers are "permanent substitutes", some administrators are teaching, some teachers are acting as administrators. others are retired but have been called back to work, others are on leave for medical reasons or maternity, etc. Thus reports from various school districts are unlikely to be on a consistent basis.

In addition, one in seven students is in a non-public school. Non-public school teachers are not included above. There were 2,828 elementary and 2,515 secondary teachers in that category in 1970-71 in Connecticut. That is 5,343 total.

Further, Connecticut has three private high schools--The Gilbert School, Winstead; the Norwich Free Academy; and The Woodstock Academy --that sell educational services to the towns in which they lie and conform to certification requirements and receive state grants, as though they were public schools, but are not counted above.

The Regional Vocational-Technical High Schools, whichare operated by the state rather than local communities, employ 649 teachers not listed above.

Finally, we can estimate that about 1,000 teachers are employed in state supported day-care centers, Head Start program, Model Cities day-care centers, and private nursery and day-care centers. Certification is now required for most of these.

Thus there may be as many as 45,000 teachers in the state, rather than the 38,481 used in this study. The lower figure is used, however, first because the majority of the difference is due to the private schools for which certification is not required: second because we are told that turnover is low in the Vocational-Technical Schools and in day care(because most teachers were hired recently).

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Children in School

The second thing we know, fairly well, is the number of young people who are in school or will be. Here there are very good projections indeed from the Connecticut State Department of Education published in June 1971 and again, updated, in June 1973. They are derived from the recorded and projected births each year in the state, adjusted according to the experience of other years on "persistence" from grade to grade. It should be noted that persistence is the net effect of adding new arrivals from out of state or by transfer from parochial or private schools minus the dropouts, deaths, and migration out of state. Thus, going from eighth to ninth grade, "persistence" actually goes up to 104.3%.

The enrollment tables published by the State Department of Education will not be questioned here, but must be updated because the birthrate did not go the way they expected. Their assumptions are shown on Figure I, taken from the 1971 and 1973 reports. The actual figure for 1973 is of course now known and was much lower than expected. This downward correction will have a substantial and increasing downward effect every year after 1978 when those children reach school.

More important, it changes the whole mood of the projection. As they saw it in 1971, although births were down to 50,000 from the peak year (57,000), they were due to rise to 58,000 in 1973 and to 73,000 in 1980. Thus demand for new teachers was to be steady for a while and then heavy.

By 1973 it had become clear that there would be a distinct slack period, but they expected things to pick up gradually thereafter.

Now all uncertainty is gone. We are certainly in for a prolonged shrinkage of school enrollments as the relatively small group born the last few years moves through the schools.

The point is that the total enrollment decreases each year due to graduation, dropping out, and migration; but is augmented by new entries into kindergarten and some in-migration.

In the peak year, 1971, we graduated 38,873, and lost 12,760 in other ways, but the next fall, 48,530 entered kindergarten, so enrollment in 1972 was down only 2,103. For the next few years, up to 1978, we will graduate larger and larger classes, but bring in smaller and smaller classes into kindergarten so that shrinkage will grow to about 19,000 per year by 1979.

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The assumption used in this study is shown in Figure I and described in Appendix A. It is that the birthrate will stabilize at about 11.0 per thousand. With that assumption enrollment will fall steadily until 1990. That year it would be 460,993, down 31% from the peak year, 1971, when it was 666,827.

An upper limit on the way the birthrate might rise is also shown in the Appendix. Using that very unlikely sharp, sudden rise, school enrollment would decline until 1986.

A lower limit is also shown which would not lead to a stable school population until about 1992.

To summarize, there is no chance that enrollment will stabilize before 1986, and it will probably fall steadily until 1990 or even 1992.

Job Openings

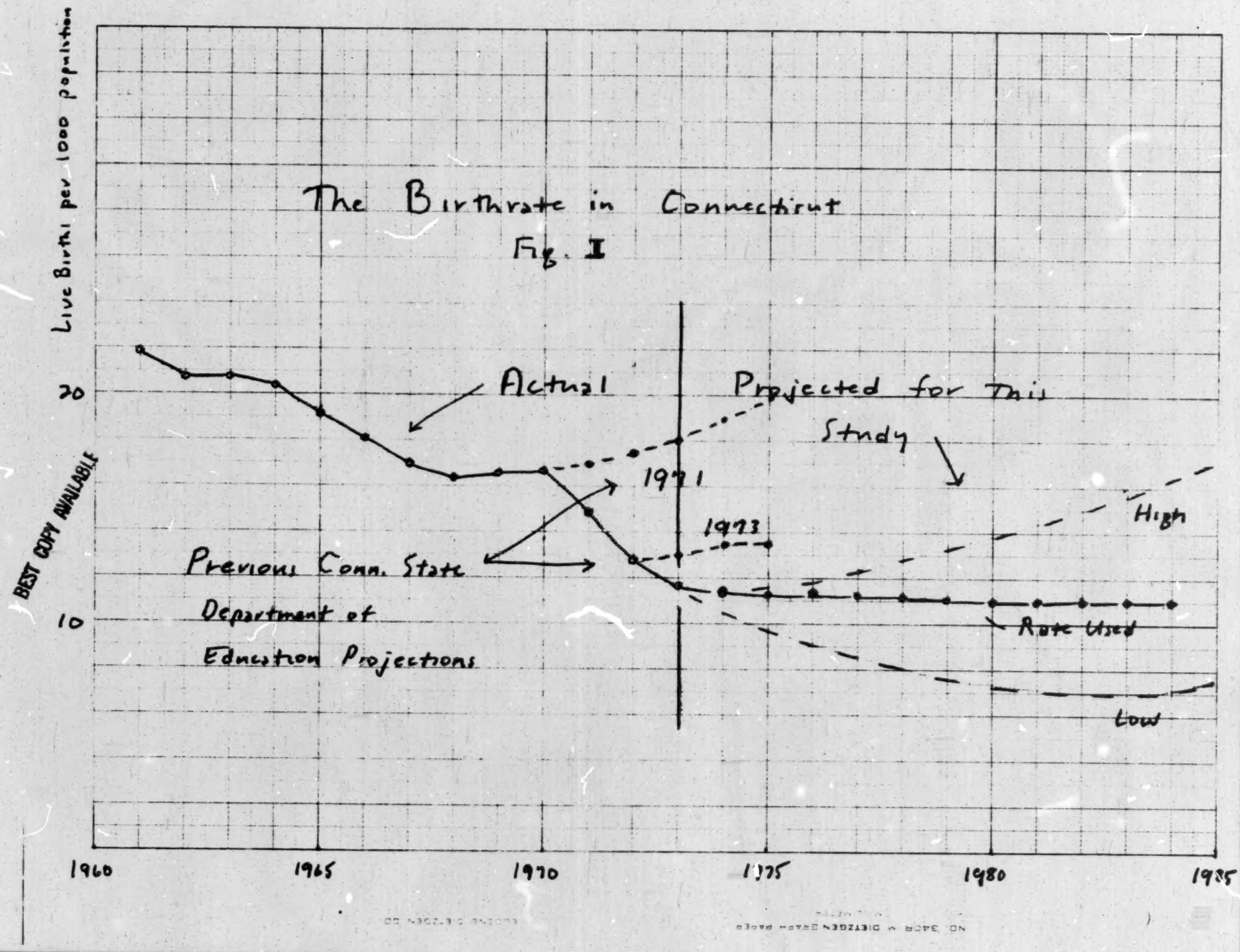
Even though demographic demand is negative, there will still be new jobs because teachers leave the profession. Other jobs might be created when schools reduce class size or add new programs or services. This is sometimes estimated separately as "quality improvement". This possibility is not taken into account in this study.

The word "turnover" is used by the State Department of Education for those leaving the profession. They estimated in 1971 that each year 10% of the teachers would have to be replaced.

Apparently that figure was based on experience gained in the 1960's when teachers had no trouble finding jobs, and thus dropped out without worrying about re-entering the profession. Now when jobs are scarce, there is apparently less turnover and in the 1973 report, they used a figure of 7.5% each year.

This point has been corroborated by the NEA in a study in September 1972. They say:

> Some evidence suggests that the factors influencing teacher supply and demand may not be operating at normal levels in some localities again this year. In some areas the rate of teacher loss through turnover may be reduced from normal levels because relatively fewer jobs are now available outside teaching; and because teaching positions are not as plentiful as in earlier years, fewer experienced teachers are terminating their present jobs in the anticipation of a transfer or an interruption of their teaching careers.



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It should also be noted that insofar as many who left teaching did so to have a family, the fall in the birthrate can also diminish turnover.

The U. S. Office of Education has usually used a figure of 8% per year for those that "leave the profession temporarily or permanently each year". The figure was the result of a study carried out in 1959-60. If their definition is used, we must then augment the "supply" figure by the number who withdrew "temporarily" and seek to return to work.

A more recent study by Metz and Fleischman (1974) covering the years 1968-69 (which was before jobs became scarce) found 9.12% of teachers who "separated" from their jobs that year, but of this group 2.57% ended up as "teaching status unknown" and only 6.54% "did not teach in another school following separation". We can only conclude that turnover was somewhere between 6.54% and 9.12%. Elementary and secondary teachers showed similar behavior, and rural, suburban and city patterns were much the same.

Only 6.7% of the group that "did not teach in another school the previous year" were experienced teachers re-entering the profession. 92.2% were beginners. Earlier studies cited by them show that in 1959-60 and 1965-66, there were proportionately more re-entries.

Given this insight we can say that a nominal 8% turnover as used by the Office of Education calls for 7.36% new teachers.

Very good data on the actual number of new teachers hired in recent years can be found on Form ED 004, submitted each year to the State Department of Education. One of the columns of that form calls for separately identifying new inexperienced teachers, new experienced teachers, and teachers held over from previous years. Unfortunately, it has not been possible for them to analyze or publish that data for some years. For this study, a sample was taken of seventeen school districts employing a total of 5,628 teachers. It was found that 386 were inexperienced new ones. That is 6.85%. Bridgeport had 5.3% new teachers, Greenwich only 3.1%, but Hamden, a fast-growing suburb had 16.1% new. Thus we can see that a replacement rate of 7.5% is reasonable and may be slightly high.

If we then take the 7.5% "turnover" as given, we can use the 1973 projection of the State Department of Education, correcting the figures for 1978-79 and after.

The worst problem is that of the elementary schools:

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New Elementary Teachers Needed

Year	Elementary Teachers at Work	Needed for Turnover	Demographic Need		Job Openings	1973 State Estimate
1973-74	16,575	1,270	-362	=	908	Same
1974-75	16,302	1,242	-273	=	970	Same
1975-76	16,020	1,223	-282	=	941	Same
1976-77	15,645	1,201	-275	=	826	Same
1977-78	15,082	1,173	-562	=	611	Same
1978-79	14,495	1,131	-588	=	543	642
1979-80	13,924	1,087	-571	=	516	776
1980-81	13,366	1,044	-558	=	486	817

Corrected Figures

The last three figures are reduced from their 1973 report by 99 (1978-79), 260 (1979-80), and 331 (1980-81). Thus we find that new knowledge of the birth rate learned in February 1974 reduces our calculation of 1980-81 demand for elementary school teachers by 40% from what had been predicted just ten months ago. That year is shortly after young people starting college this fall will reach the job market. This is what gives this report urgency.

The opportunities in junior high schools and high schools will not be influenced by the recent turndown in birthrate until 1983 or 1984, though the slump thattook place between 1964 and 1968 is already being felt. These figures are copied directly from the 1973 projection and need no correction:

New Secondary Teachers Needed

Year	Grades 7-8	Grades 9-12	Total Grades 7-12
1973-74	443	957	1,400
1974-75	367	953	1,320
1975-76	400	885	1,285
1976-77	432	793	1,225
1977-78	242	820	1,092
1978-79	98	777	875
1979-80	110	650	760
1980-81	280	494	774

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The total number of teachers needed can now be adapted from the 1973 state study with our corrected figure shown, and their original figure in parentheses. A few have been added to account for special education and ungraded classes:

Year	Total of New Teachers Needed	
1973-74	2,279	
1974-75	2,355	
1975-76	2,288	
1976-77	2,105	Original
1977-78	1,747	Projections, 1973
1978-79	1,461	(1,560)
1979-80	Corrected 1,321	(1,581)
1980-81	1,305	(1,636)

Sensitivity to Assumptions and Changes

There will continue to be about 30,000 to 35,000 teachers at work through the decade so a 1% change in the "turnover" creates or eliminates 300-350 new jobs. Our uncertainty is at least that great.

It has been assumed that the student/teacher ratio will be 20/1. At least some schools will choose to have smaller classes rather than lay off teachers. If that ratio changed to 19/1 in a single year, 150 to 175 jobs would be created. It may happen, since it is common to base each budget on the previous year and in many towns the loss of a few students will not be mentioned. On the other hand if teachers leave voluntarily, they may not be replaced since budget pressure makes that one of the few places where money can be liberated for better salary raises. Furthermore, both state and federal aid programs are reduced when enrollment decreases.

There is a gradual closing down of parochial schools at this time, and this might add 1% per year to the predictions given about; i.e., 300 jobs; but of course that puts 300 parochial-school teachers out of jobs, so there is little net gain.

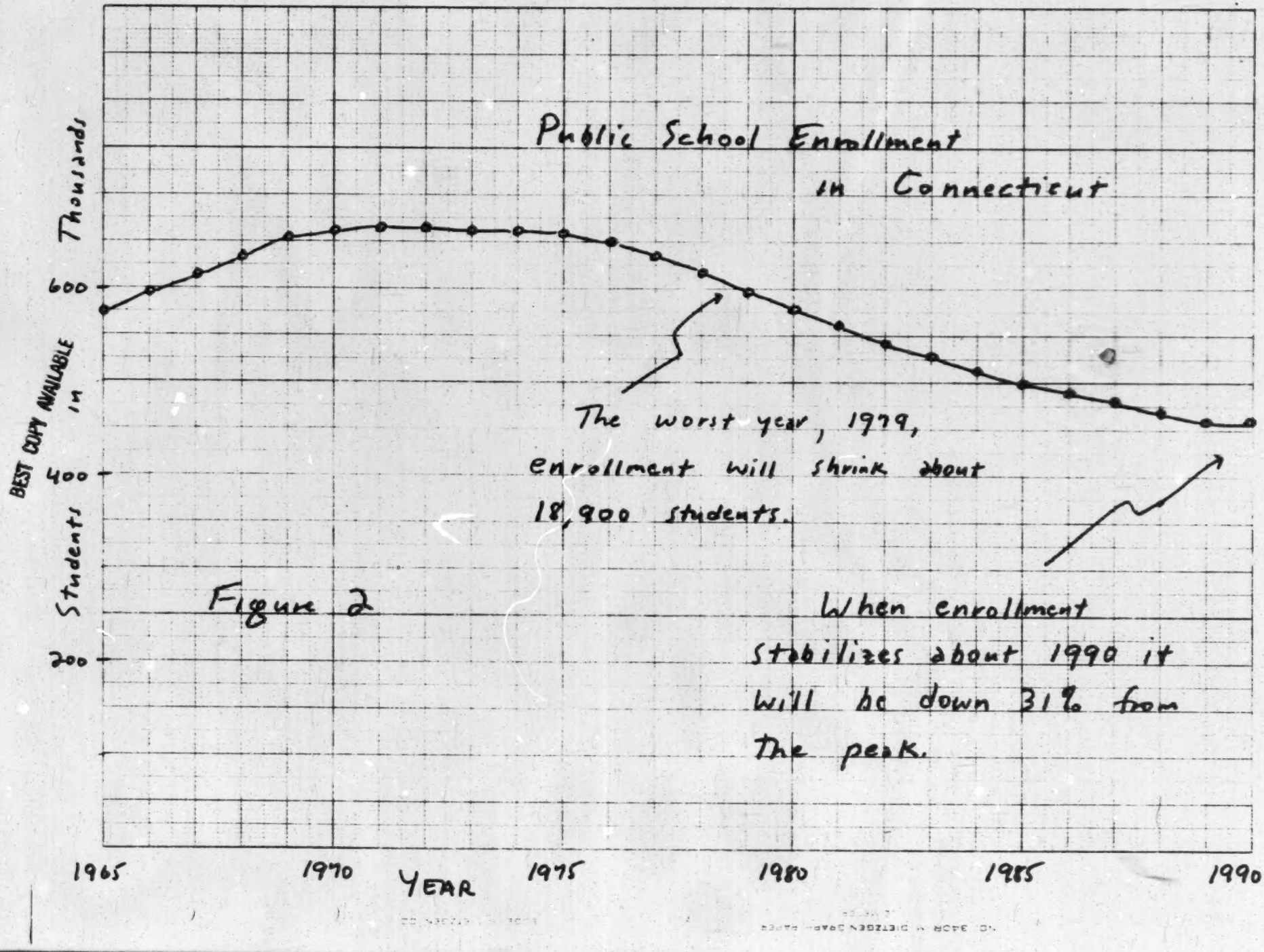

Figure 2

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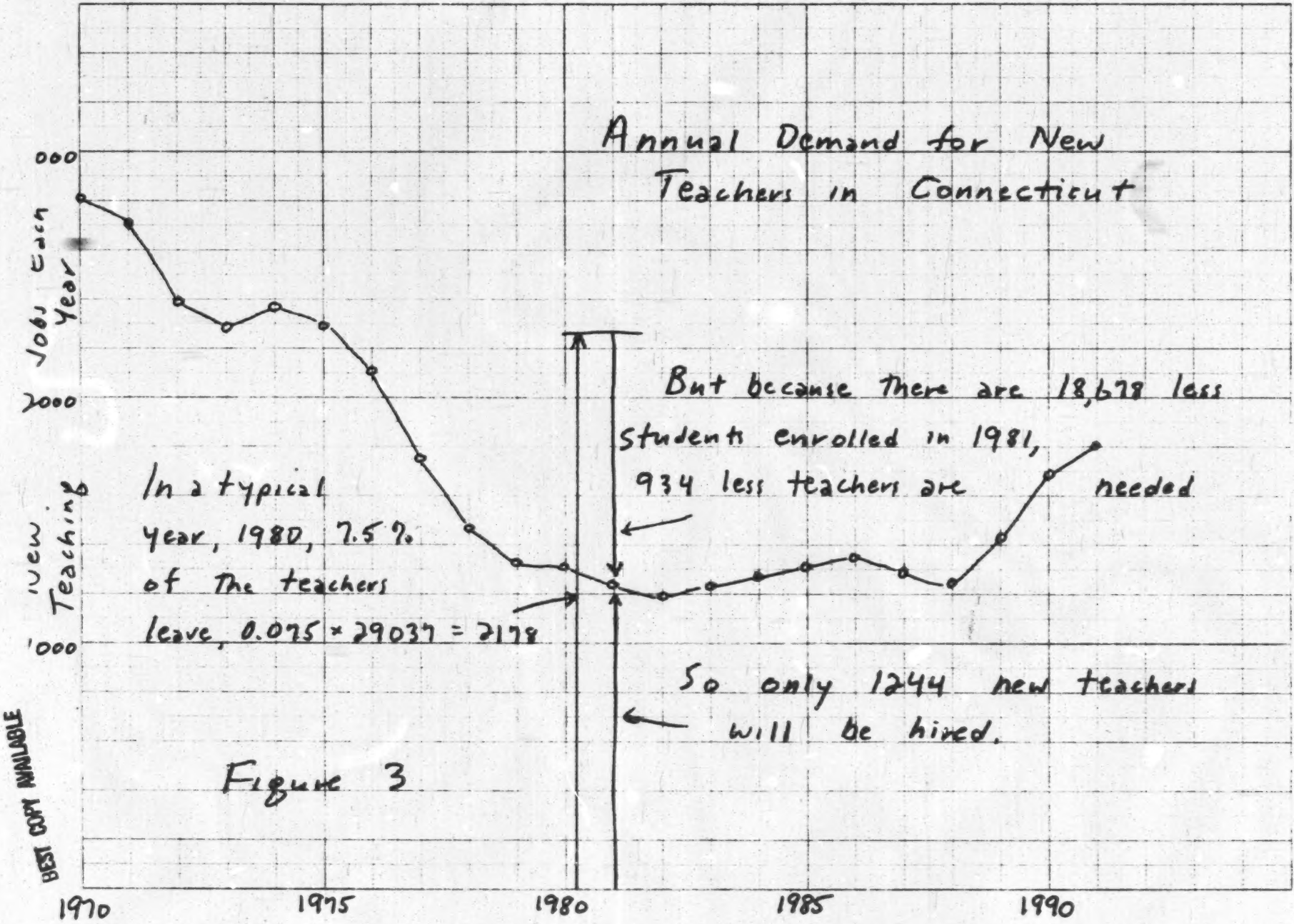
Annual Demand for New Teachers in Connecticut
000
Jobs Each Year
2000
New Teaching
1000
In a typical year, 1980, 7.5% of the teachers leave, 0.075 × 29037 = 2178
But because there are 18,678 less students enrolled in 1981, 934 less teachers are needed
So only 1244 new teachers will be hired.
1970
1975
1980
1985
1990

Figure 3

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Many people have predicted a wide-spread development of pre-school education, and have expected this to create many new jobs for specially trained teachers. It is hard to accept this in Connecticut at this time. Growth, though distinct, is slow, and probably does not create jobs for more than 50 teachers a year added to the 1,000 now at work.

The most puzzling question is that of the birthrate, but any change this year or in the future will not be felt until 1980 and later, and no sudden upturn has ever been seen before except in time of war. See Appendix A.

What we Know about the Supply

Many students in colleges in Connecticut enroll in teacher-training programs and get degrees in Education. Those degrees are counted by the Commission for Higher Education each year. Here is what they found:

Year	BA	MA	Ed.D
1971	2,479	2,242	46
1972	2,722	2,506	66
1973	3,012	2,805	64

It would be misleading to add them up. Many of the MA's were awarded to those who had gained the BA a few years earlier. On the other hand, other MA's are awarded to students of the liberal arts who decided to qualify for a teacher's certificate. We don't know how many new teachers are to be found in the MA column. The 3,012 BA's are all newly qualified, of course, and since only 2,270 jobs were expected to open up, that alone would be cause for gloom. Note the steady growth.

The degrees in Education are an inadequate measure, however, for many students majoring in other fields take those courses that are required for a provisional teaching certificate. A very rough guess would be that maybe 1.5 x as many were qualified to get provisional certificates as were awarded named education degrees. That would suggest that throughout the state perhaps 4,083 qualified in 1972 (1.5 x 2,722) or say 4,000.

Now we are in a position to ask the State Department of Education how many provisional certificates they actually awarded. Hold your Hat!

Year	Provisional Certificates	Standard Certificates
1969-70	10,243	1,903
1970-71	8,389	2,446
1971-72	8,844	2,830
1972-73	8,684	3,653
1973-74	9,000 (estimated)	4,800 (estimated)

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Migration

The certificate figures are much enlarged by the inclusion of many young people from other states who gained certification here on the basis of training they received outside of Connecticut. They got themselves certified in order to be able to hunt for jobs here. On the other hand, a very large number were Connecticut residents who left the state to go to college and are now seeking to return home. In 1968 when interstate migration was last tabulated, it was found that 43,281 Connecticut high school graduates were studying out of state. About 1,500 of them probably got certified as teachers that year. The opposite effect is at work, of course: Connecticut has 18,000 full time undergraduates from out of state this year, and many of them will return to their home states.

The net effect of migration is outward for education and inward for job hunting, however, and thus many, probably about 6,000 of the provisional certificates went to people for whom Connecticut teaching jobs were their first choice.

A rough correlation can be found with figures from 1972 published by the NEA who estimated that 324,099 teachers were being newly qualified that year nationally. Connecticut has 1.46% of all teachers in the country so its share may have been 4,860 new teachers.

A Growing Pool of Teachers not Teaching

The work "supply" does not mean just the newly qualified candidates. Each certified teacher that does not find a teaching job becomes part of a stockpile that may or may not compete other years. There is no way to count the numbers in this pool except perhaps by sampling and interviewing what has happened to those to whom provisional certificates were issued over the last six or seven years. There must be more than 5,000. The NEA estimated a national total of 266,600 eighteen months ago. The Connecticut share (1.46%) would be 3,892, or say, 4,000.

In addition, there has been a tendency for teachers to be squeezed out of the profession involuntarily. When forced to leave one job; e.g., for family reasons, it often proves impossible to find another. Sometimes the experienced teacher loses out because the inexperienced one is cheaper. The NEA has also commented on this. This further enlarges the pool.

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Will Market Forces Solve the Problem?

Classical economic theory would lead one to expect a rapid drop in teacher's salaries followed by the withdrawal of many individuals who could find better-paid alternatives. At the same time less students would choose to prepare for careers in teaching. After a while supply and demand would come back into balance. The former won't happen very quickly because of the teachers' unions. This is, of course, characteristic of much of American society.

Student response may be substantial. Central Connecticut State College reported in December 1972, that teacher training was attracting less students:

Year	% in Education
Seniors	64%
Juniors	50
Sophomores	48
Freshmen	39

This is a little surprising because experts were still predicting only a temporary slackening in demand, though it was common knowledge that jobs were scarce. If the points described above were more widely known, we might expect still more student response.

Figures from the University of Hartford also show a distinct slackening of student interest; e.g., first-year enrollment in Education is down from 286 (1970) to 179 (1973). That is nearly a 40% reduction in three years. In addition, a matrix of enrollment by level over a four-year period shows a small decrease in class-to-class retention in the School of Education. That may reduce production by another 20% to 30% for an overall reduction of more than 50%. The time lag in student response is vivid in the figures: 1970 was the peak year for freshmen, 1971 for sophomores, and 1972 for juniors.

A leaflet from the NEA (Graybeal, 1973) shows a similar pattern. They found freshman enrollment in 67 large institutions to be down 32.1% in 1972. Similarly, freshman enrollment had peaken in 1969, junior enrollment in 1970, and senior enrollment in 1971. On the basis of this information, they project a drop from 324,000 graduates completing preparation to enter teaching in 1972, the peak year, to 219,400 in 1976. This is a 32% drop. It will probably be more, and will continue to drop. They did not extend their estimate beyond the class of 1976; i.e., the freshmen already enrolled.

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In summary, we see distinct evidence that student interest in teaching will slacken appreciably, maybe by as much as 50% in three years, and clearly by 30% to 40%. Unfortunately, demand will also slacken at the same time, though more slowly at first, and during the adjustment period, a substantial number of certified teachers will be added to the pool of those not teaching.

The Prognosis

There are now 2 1/2 to 3 times as many newly qualified teachers each year as there are jobs, and an accumulated pool of certified teachers not teaching that may be as great as a two-year supply.

Demand will slacken steadily, though only a little for the next three years. It will drop rapidly after that just when new students now choosing a specialty reach the market.

Student interest in teaching careers will undoubtedly diminish, but probably not rapidly enough to change the job prospects for those who stay in.

Every month from March to August, the State Department of Education publishes a listing of openings for teachers in Connecticut Schools. The March 1974 issue shows 167 openings, only 14 of which are for elementary schools. They will send copies of the list to new teachers who submit a stamped, self-addressed envelope. They have 3,300 requests.

What Do We Tell the Students?

The truth, for a starter. It is not necessary to refine the statistics in order to see that the job prospects will be poor for teachers for many years.

One can also say, however, that the job market has never been very closely related to college education anyway. Most students are wise to study what interests them and not be too much concerned about specific career training. It helps to think of Education as an applied social science, interesting in its own right and generally useful to any adult as well as being very good training for personnel work, sales, office management, and the like, and for parenthood.

The widely heard, "There will always be a need for good teachers", is either a tautology or fatuous, though of course in even the worst years, there will be jobs for 30% or more of new graduates.

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It is quite wrong to brush aside the facts cited above with vague assertions that "demand has always fluctuated up and down".

It is also quite misleading to say, as does the Carnegie Commission in "College Graduates and Jobs", that "There is a danger of over-reaction ..." (p. 77). Institutional rigidities, sluggish student response, the legitimate claims of minority groups, the aspirations of paraprofessionals, the tenacity of those who do have jobs, and other forces will all operate to maintain business as usual, and even if a year came when there were more jobs than graduates, an immense pool of certified teachers doing other things would be available.

What Should Our Colleges Do?

Faced with the problems discussed here, it is clear that no college should deepen its commitment to teacher training or even refill vacancies, and marginal or weak programs should be phased out wherever rigidities of tenure can be overcome. The Carnegie Commission recommends "...consolidation of teacher education into a more limited number of institutions...." Are there any volunteers?

It is tempting to try to build up programs in the few specialties that still show unmet need, but every indication is that those will saturate within a year or two.

As educational techniques and technology change, there will always be work to be done updating the skills of teachers who already are at work. Colleges may find it necessary to bring some of that opportunity to the schools rather than sitting back waiting for the teachers to come to them.

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APPENDIX

The Puzzle of the Birthrate

The raw birthrate can be misleading if the age distribution of the population changes; it is better to use the number of births to women of child-bearing age, i.e., 15-44, although an easier figure is the female cohort aged 20-35 to whom 80% of the children are born.

Year	Women 20-35	Conn. Population	Ratio
1970	312,000	3,032,000	10.29%
1975	357,000	3,240,000	11.01
1980	402,000	3,445,000	11.66
1985	425,000	3,660,000	11.61
1990	419,000	3,850,000	10.88

It will be seen that an estimate of birthrate that ignores this shift in age distribution might be in error by as much as 13%. That is, a stable "fertility rate" between 1970 and 1985 would lead to a 13% increase in the birthrate.

This better method will not be used, however, because the uncertainty about what is happening is even greater than 13%. Instead, the plausible assumption is made that the birthrate, which has fallen almost to half in a decade will decrease only a little more and then stabilize at 11.0 per thousand of population. This is equivalent to saying that the fertility rate will continue to fall, though very slowly, after a period of rapid change.

The graph shows the assumption used about the birthrate, Figure 1.

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There are several demographers in Connecticut. The assumptions used here have been discussed with them and they accept them as reasonable but prefer not to give any official status to any projections of births.

As this is being written in May 1974, birth records are available for Jan.-March. They show that the birthrate is still going down and indicate that a birthrate of 10.2 may be reached this year compared with the 11.6 that was used in the projection. There were 8,376 births in that quarter this year -vs- 11,883 in the same period in 1971.

No one claims to have a clear picture of the social factors that determine the birthrate, but most demographers agree that abortion and birth control are not the dominant forces they might be thought to be. Economic factors probably dominate, but not in obvious ways because the fertility rate, which had decreased steadily through the prosperous twenties continued to decrease during the depression.

Movement from rural to urban locations decreases fertility. Wars increase it. As more women join the labor force, fertility decreases --or is it the other way around?

The important point for this study is that it doesn't make all that much difference what happens because the kind of a jump in birthrate that would be necessary to change the conclusions is extremely unlikely. Even if we went back up to 20 per 1,000 over a ten-year period, it would still be about 1984 before we would stabilize school enrollment. It would take a sudden dramatic change in our social, political, or economic system to cause that--a world war, a fascist dictatorship, or a tidal wave of immigration.